# CTK38 User Manual

VHF MICROEAR

"DESKTOP" TRANSMITTER

SN: _____

Rev. 01

Date: 20 October 2014

# BRIEF DESCRIPTION

The CTK38 is composed by a VHF transmitter (**CST38**) and a power supply (**PSP910**).

The CST38 transmitter has been especially designed to allow best usage of MicroEar's family "in-ear receivers" and many modulation parameters such as deviation, level/frequency curve, compression factor has been optimized. Therefore CST38 assures maximum performances of MicroEar both as sound quality and as audio level (in any case limited because of the very small size of receiver).
Higher power transmitter are available to further increase the coverage area (cell); it is also possible to link in parallel several transmitters (in iso-frequency mode) to create a multiple cells coverage.
MicroEar internal battery has about 30 hours working autonomy; in any case the original battery once activated (taking out metal label) has a limited life even in power off.
When empty battery, MicroEar will drastically reduce audio level and receiver sensitivity.

*Example of VHF IEM System*

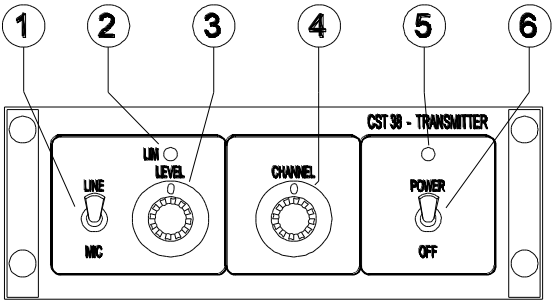
* Not included

# SAFETY INSTRUCTION

- Read this safety instruction and the manual first
- Follow all instructions and information.
- Do not lose this manual.
- Do not use this apparatus under the rain or near the water.
- Do not install the apparatus near heaters or in hot environments, do not use outside the operating temperature range.
- Do not open the apparatus, only qualified service technician are enabled to operate on it. The apparatus needs servicing when it is not properly working or is damaged by liquids, moisture or other objects are fallen in the apparatus.
- Use only accessories or replacement parts authorized or specified by the manufacturer.
- Clean the apparatus only with dry cloths, do not use liquids.
- Report the serial number and the purchasing date in front of the manual. It is needed to have proper replacement parts or accessories from the manufacturer.
- When replacement parts are needed, use only replacement parts authorized from the manufacturer. Substitution with not authorized parts could result in electric shock, hazards or fire.
- Keep attention on all the labels with warnings or hazards on the apparatus.

**WARNING:** The apparatus is intended for professional use; anyway the manufacturer alerts the user that the headphone output power of the apparatus could exceed the level of 85 dB(A) of sound pressure level and this could be dangerous for the hearings. Do not use the headphone with high power level or for long time. Reduce the power or suspend the hearing in case of any kind of hearing problem.

# FRONT PANEL




1) SELECTOR: modulation audio input level range (***Micro*** / ***Line***).

2) LED INDICATION: peak-indicator / limiter-on status (yellow Led).

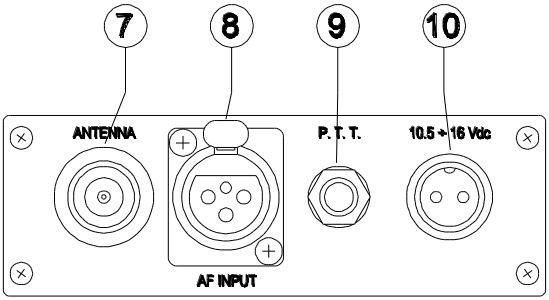
3) ADJUSTMENT: audio input sensitivity.
With the optimum sensitivity adjustment, the yellow Led [2] must flash under modulation peaks.

4) SELECTOR: transmitting channel ( ***0 ÷ F*** ).

5) LED INDICATION: apparatus is on (red Led).

6) SWITCH: On / Off (***Power***).

# REAR PANEL




7) CONNECTOR: antenna (N-F type connector).

8) CONNECTOR: modulation audio input (XLR3-F type connector).

The audio input line is transformer balanced and floating.

• pin 1 = ground; • pin 2 = AF-a input; • pin 3 = AF-b input.

9) CONNECTOR: transmission activation (Push To Talk) (mono ¼" - 6.3 mm, standard jack type).

The transmission is allowed when the central pin (hot) is connected to external ring (ground).

**Note #1**: in the standard version of CST 38, when the PTT plug is not inserted, the carrier is still activated.

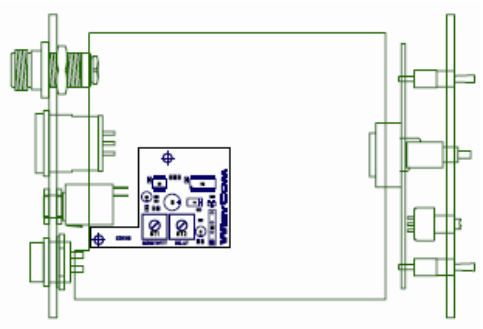
Instead, when the CST 38 is provided with the optional VOX 38 – Voice Activated Circuit board, the carrier is activated automatically only when the input audio-signal reaches the activation-threshold pre-set in the VOX 38 board. However, the external PTT circuit (if connected) can override the VOX 38 device and force the CST 38 in continuous transmission.

10) CONNECTOR: dc power input (10.5 ÷ 16 Vdc).

(• pin 1 = +Vdc, • pin 2 = ground).

# OPTIONAL

## VOX 38 - Voice Activated Circuit board



***VOX 38 board**, mounted on the CST 38 main board*

This device is useful to switch on automatically the carrier of the transmitter only when the modulating signal is present on the TX's input. The circuit is mounted on a printed-circuit board, that has to be factory-mounted in the transmitter.

Once the modulation audio signal reaches the pre-set threshold, the transmitter is activated.

When the modulating audio signal is not more present, the carrier is switched off again, after a pre-set delay time. Consequently the relevant *MicroEar* receiver is muted by its built-in squelch circuit, preventing the listening of unwanted noise.

Two pre-setting values can be adjiusted by means of relevant screwdriver-trimmers situated on the printed-circuit board: RT1 for audio "sensitivity" and RT2 for "delay" time.

# TECHNICAL SPECIFICATIONS

- Switchable channels : 16, preset in the 140 ÷ 250 MHz range (other upon request).
- Switching-window : 10 MHz (other upon request).
- Frequencies : microprocessor controlled PLL synthesizer circuit, with 25 kHz minimum step **[1]**.
  They are easily PC reprogrammable by the optional "UPK 32 Programming kit".
- Channel spacing : 25KHz standard (*Other on request*)
- Frequency error : < ±5 ppm, in the rated temperature range.
- Temperature range : -10 ÷ +55 °C.
- RF output power : 300 ÷ 10 mW (± 1 dB) **[1]**.
- RF output impedance : 50 ohm (type N-F connector).
- Spurious emissions : < 2 nW.
- Transmission activation : remote PTT (Push To Talk) circuit, wired to ¼" (6.3 mm) mono jack connector.
  The transmission is allowed when the central pin (hot) is connected to external ring (ground). See **Note #1** on front page.
- Modulation : FM (peak deviation = ±5 kHz).
- Mod. audio input : transformer balanced, floating.
- Mod. audio input level : ***Micro*** / ***Line*** switchable, and externally adjustable between:
  ⇒ ***Micro*** = -64 ÷ -34 dBu (0.5 ÷ 15 mV)
  - Input impedance = > 2 Kohm

  ⇒ ***Line*** = -22 ÷ +8 dBu (60 ÷ 1,950 mV)
  - Input impedance = > 10 kohm.
- Peak-limiter : automatic, with dynamic-range > 30 dB over the level set for the nominal modulation.
- NR system : compressor circuit with noise-gate, specially adapted to the ***MicroEar*** receivers.
- AF bandwidth : 200 Hz ÷ 5 kHz (-3 dB).
- Distortion : < 0.5 % (0.25% typ.).
- SND/N ratio : > 80 dB (83 dB typ.), CCITT measured.
- Led indications : ⇒ Transmitter On (red LED)
  ⇒ Limiter On (yellow LED).
- Powering : 10.5 ÷ 16 Vdc, 300 mA max. (negative ground).
- Dimensions : 40 x 120 x 175 mm.
- Weight : 700 g ca.

**NOTE [1]:** according to local regulations

# DECLARATION OF CONFORMITY

**Manufacturer Name**: WISYCOM S.r.l.

**Manufacturer Address**: Via Spin, 156
36060 Romano d'Ezzelino (VI)
Italia

## Herewith we declare that:

Product Type : VHF Transmitter

Product Name : **CST38 + AWN38-V ( whip antenna)**

Optional and Accessories: This declaration includes all the options and accessories included into the product mentioned above.

## We declare that the above mentioned product is compliant with the R&TTE Directive (1999/5/EC).

The conformity is achieved by fulfilling the following European Standards:

| | | |
|---|---|---|
| ☒ | ETS 300 445 | Radio Equipment and Systems (RES); Electro-Magnetic Compatibility (EMC) standard for wireless microphones and similar Radio Frequency (RF) audio link equipment. |
| ☒ | ETS 300 086 | Electromagnetic compatibility and Radio spectrum Matters (ERM); Land Mobile Service; Radio equipment with an internal or external RF connector intended primarily for analogue speech. |
| ☒ | EN 60950 | Safety of information technology equipment |

Romano d'Ezzelino (VI) — **City**

14/01/2002 — **Date**

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**Obblighi di informazione agli utilizzatori**

***Modello di informazioni agli utenti dei prodotti di tipo "professionale"***

**INFORMAZIONE AGLI UTENTI**

ai sensi dell'art. 13 del Decreto Legislativo 25 luglio 2005, n. 151 "Attuazione delle Direttive 2002/95/CE, 2002/96/CE e 2003/108/CE, relative alla riduzione dell'uso di sostanze pericolose nelle apparecchiature elettriche ed elettroniche, nonché allo smaltimento dei rifiuti"

Il simbolo del cassonetto barrato riportato sull'apparecchiatura o sulla sua confezione indica che il prodotto alla fine della propria vita utile deve essere raccolto separatamente dagli altri rifiuti.

La raccolta differenziata della presente apparecchiatura giunta a fine vita e' organizzata e gestita dal produttore. L'utente che vorrà disfarsi della presente apparecchiatura dovrà quindi contattare il produttore e seguire il sistema che questo ha adottato per consentire la raccolta separata dell'apparecchiatura giunta a fine vita.

L'adeguata raccolta differenziata per l'avvio successivo dell'apparecchiatura dismessa al riciclaggio, al trattamento e allo smaltimento ambientalmente compatibile contribuisce ad evitare possibili effetti negativi sull'ambiente e sulla salute e favorisce il reimpiego e/o riciclo dei materiali di cui è composta l'apparecchiatura.

Lo smaltimento abusivo del prodotto da parte del detentore comporta l'applicazione delle sanzioni amministrative previste dalla normativa vigente.

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